



Professor Valery P. Matveenko

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Department of Continuum Mechanics and Computational Technologies
Ural Branch of Russian Academy of Sciences
Perm State University, Perm, Russian Federation

Education Background and Academic Degrees and Titles:

Perm Polytechnical Institute, Faculty of Aircraft Engines, “Dynamics and Strength of Machines” Specialty, 1972

Post-graduate study – Moscow Institute of Electronic Engineering, 1978

Candidate of Physics and Mathematics, 1978, Moscow Institute of Electronic Engineering

Doctor of Technical Sciences, 1987, Moscow Institute of Electronic Engineering

Professor, 1988

Corresponding Member of the Russian Academy of Sciences, 1997

Full Member of the Russian Academy of Sciences, 2003

Stages of Professional Career:

Engineer, Junior and Senior Research Fellow of Department of Polymer Physics of the Ural Centre of the Academy of Sciences of the USSR, 1972–1980.

Academic Secretary, Institute of Continuous Media Mechanics of the Ural Branch of the Russian Academy of Sciences, 1980–1983.

Head of Laboratory of modelling the thermo-mechanical processes in solids, Institute of Continuous Media Mechanics of the Ural Branch of the Russian Academy of Sciences, 1983 -up to now.

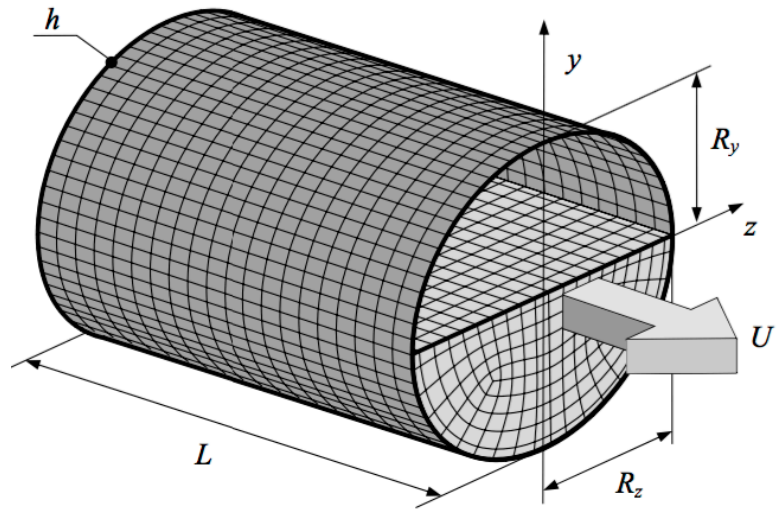


Figure 1: Scheme and an example of a finite-element discretization.

From: S.A. Bochkarev, S.V. Lekomtsev and V.P. Matveenko. Natural vibrations and stability of shells with arbitrary cross-section, containing flowing fluid. Proc. 11th International Conference on Vibration Problems, Lisbon, Portugal, 2013.

Deputy Director for science, Institute of Continuous Media Mechanics of the Ural Branch of the Russian Academy of Sciences, 1988–1993.

Director, Institute of Continuous Media Mechanics of the Ural Branch of the Russian Academy of Sciences, 1993–up to now.

Head of Department of Applied Mechanics and Computational Technologies, Perm State University, 1999–2004.

Chairman, Perm Scientific Centre of the Ural Branch of the Russian Academy of Sciences, 2000–up to now.

Head of Department of Continuum Mechanics and Computational Technologies, Perm State University, 2004–up to now.

Vice-chairman of the Ural Branch of the Russian Academy of Sciences, 2008–up to now.

Current Research Activities:

Theory of elasticity: singular solutions in the vicinity of different types of singular points; geometry optimization of elastic bodies in the vicinity of singular points; analytical and numerical solutions of static and dynamic problems of asymmetric theory of elasticity; experimental study of the couple stress behavior of elastic bodies. Theory of viscoelasticity: numerical methods for solving multi-operator problems of linear viscoelasticity; solution of dynamic problems of viscoelasticity; optimization of dynamic characteristics of viscoelastic bodies. Problems of electroviscoelasticity and their application to calculation and optimization of the dynamic characteristics of objects made of SMART materials. Aeroelasticity: stability of deformable bodies interacting with the flow of liquid or gas. Inverse problems of identification of model parameters for elastic and viscoelastic bodies. Modeling of thermomechanical behavior of polymers and polymer-based composites taking into account phase and relaxation transitions in material. Numerical methods in Solid Mechanics.

Academic and Other Awards:

Medal “for Labour Valour” (1986)

“Order of Honour”(1998)

Laureate of the State Prize in Science and Technology (1999)

Golden badge “Coat of Arms of Perm Region” (2005)

Order “for merits to Fatherland” IV degree (2008)

Total Publications:

Scientific papers – 320; Monographs – 4; Textbooks (tutorials) – 3.

Selected Publications:

S. A. Bochkarev and V. P. Matveenko, “Numerical modelling of the stability of loaded shells of revolution containing fluid flows”, *Journal of Applied Mechanics & Technical Physics*, Vol. 49, No. 2, pp 313-322, March 2008

S. A. Bochkarev and V. P. Matveenko, “Numerical study of the influence of boundary conditions on the dynamic behavior of a cylindrical shell conveying a fluid”, *Mechanics of Solids*, Vol. 43, No. 3, 2008, pp. 477-486

Bochkarev, S.A., Matveenko, V.P.: The dynamic behaviour of elastic coaxial cylindrical shells conveying fluid. *J. Appl. Math. Mech.* 74, 467–474 (2010)

Bochkarev, S.A., Matveenko, V.P.: Stability analysis of loaded coaxial cylindrical shells with internal fluid flow. *Mech. Solids.* 45, 789–802 (2010)

- S.A. Bochkarev and V.P. Matveenko, "Natural vibrations and stability of a stationary or rotating circular cylindrical shell containing a rotating fluid", *Journal of Computers and Structures*, Vol. 89, Nos 7-8, April 2011, pp 571-580
- Bochkarev, S.A. and V.P. Matveenko, 2011. Natural vibrations and stability of shells of revolution interacting with an internal fluid flow. *J. Sound Vibr.*, 330: 3084-3101.
- Bochkarev, S.A., Matveenko, V.P.: Stability analysis of cylindrical shells containing a fluid with axial and circumferential components. *J. Appl. Mech. Tech. Phys.* 53(5), 768–776 (2012)
- Bochkarev, S.A., Matveenko, V.P.: Stability of a cylindrical shell subjected to an annular flow of rotating fluid. *J. Sound Vib.* 332(18), 4210–4222 (2013)
- S.A. Bochkarev, S.V. Lekomtsev and V.P. Matveenko, Numerical modeling of spatial vibrations of cylindrical shells, partially filled with fluid. *Computational Technologies*, 18, 12–24, 2013 (In Russian).
- Bochkarev, S.A., Matveenko, V.P.: Numerical analysis of stability of a stationary or rotating circular cylindrical shell containing axially flowing and rotating fluid. *Int. J. Mech. Sci.* 68, 258–269 (2013)
- S.A. Bochkarev, S.V. Lekomtsev and V.P. Matveenko. Natural vibrations and stability of shells with arbitrary cross-section, containing flowing fluid. *Proc. 11th International Conference on Vibration Problems*, Lisbon, Portugal, 2013.
- Sergey A. Bochkarev, Sergey V. Lekomtsev and Valery P. Matveenko, "Natural vibrations and stability of non-circular FGM shells containing fluid", 11th World Congress on Computational Mechanics (WCCM XI), 5th European Conference on Computational Mechanics (ECCM V), 6th European Conference on Computational Fluid Dynamics (ECFD VI) E. Oñate, J. Oliver and A. Huerta (Eds), Barcelona, Spain, 2014
- Bochkarev, S.A., Lekomtsev, S.V., Matveenko, V.P.: Parametric investigation of the stability of coaxial cylindrical shells containing flowing fluid. *Eur. J. Mech. A Solids.* 47, 174–181 (2014)
- Bochkarev, S.A., Matveenko, V.P.: Specific features of dynamic behavior of stationary and rotating single/coaxial cylindrical shells interacting with the axial and rotational fluid flows. *J. Vib. Acoust.* 137, 21001 (2015)
- Sergey A. Bochkarev and Valery P. Matveenko, "Stability of rotating coaxial cylindrical shells interacting with a flowing and rotating fluid", *International Journal of Structural Stability and Dynamics*, Vol. 15, No 5, June 2015